In The Claims:

1. (Currently Amended) A microfluidic device for displaying indicia in response to a change in a predetermined parameter of a fluid-flowing therethrough, comprising:

a body defining a channel for accommodating the flow of the fluid therethrough; and

a monitor structure retained [disposed] in the channel of the body at a user desired position within [in] the flow of fluid, the monitor structure displaying a first indicia in response to the predetermined parameter of the fluid having a first value and a second indicia in response to the predetermined parameter of the fluid having a second value[.];

wherein the first and second indicias are independent of size.

2. (Original) The microfluidic device of claim 1 wherein the monitor structure includes a polymerized mixture, the polymerized mixture including an immobilized dye being a first color in response to the predetermined parameter of the fluid having the first value and being a second color in response to the predetermined parameter of the fluid having the second value.

3. (Original) The microfluidic device of claim 2 wherein the first indicia is provided by the dye being the first color and the second indicia is provided by the dye being the second color.

4. (Original) The microfluidic device of claim 2 wherein the dye is phenolphthalein.

5. (Original) The microfluidic device of claim 2 wherein the dye is congo red.

6. (Original) The microfluidic device of claim 2 wherein the mixture includes a hydrogrel, a photo-initiator, and a cross-linker.

7. (Original) The microfluidic device of claim 1 wherein the monitor structure includes a polymerized mixture, the polymerized mixture having a first dimension in response to the predetermined parameter of the fluid having the first value and of a second dimension in response to the predetermined parameter of the fluid having the second value.

Claim 8 (Cancelled)

9. (Original) The microfluidic device of claim 1 further comprising a second monitor structure disposed in the channel of the body in the flow of fluid, the second monitoring structure providing a first indicia in response to a second predetermined parameter of the fluid having a second indicia in response to the second predetermined parameter of the fluid having a second value.

10. (Currently Amended) A method for monitoring the environment within a microfluidic device, comprising the steps of:

immobilizing [providing] a monitor structure in a channel of the microfluidic device; and

passing fluid over the monitor structure in the channel;

whereby the monitor structure generates a visual display independent of size in response to exposure to a parameter of the fluid having a predetermined value.

11. (Original) The method of claim 10 wherein the step of providing the monitor structure includes the additional step of immobilizing a dye in a polymer matrix.

12. (Original )The method of claim 11 wherein the step of immobilizing the dye includes the additional steps:

mixing the dye in a pre-polymer mixture and providing the same as a pregel;

injecting the pregel in the channel of the microfluidic device; and

polymerizing the pregel in the channel to form the monitor structure.

13. (Original) The method of claim 12 comprising the additional step of cleaning the channel of the microfluidic device after polymerizing the pregel.

14. (Original) The method of claim 12 wherein the pre-polymer mixture includes a hydrogel, a photo-initiator and a cross-linker.

15. (Original) The method of claim 12 wherein the pre-polymer mixture includes 2-hydroxy ethyl methacrylate (HEMA), acrylic acid (AA), ethylene glycol dimethacrylate (EGDMA), and 2,2-dimethoxy-2-phenylacetophenone (DMPA).

15. (Original) The method of claim 11 wherein the dye is phenolphthalein.

16. (Original) The method of claim 11 wherein the dye is congo red.

17. (Original) The method of claim 10 comprising the additional steps of:

providing a second monitor structure in the channel of the microfluidic device; and

passing fluid over the second monitor structure in the channel;

whereby the second monitor structure generates a visual display in response to exposure to a second parameter of the fluid having a predetermined value.

18. (Original) A method for monitoring the environment within a microfluidic device, comprising the steps of:

mixing a dye in a pre-polymer mixture and providing the same as a pregel;

injecting the pregel into a channel of the microfluidic device;

polymerizing the pregel in the channel to form a monitor structure; and

passing fluid over the monitor structure in the channel such that the dye changes color in response to a parameter of the fluid having a predetermined value.

19. (Original) The method of claim 18 wherein the step of polymerizing the pregel includes the step of immobilizing the dye in the polymerized pre-polymer mixture.

20. (Original) The method of claim 18 wherein the monitor structure changes dimension in response to a predetermined value of a second parameter of the fluid.

21. (Original) The method of claim 18 comprising the additional step of cleaning the channel of the microfluidic device after polymerizing the pregel.

22. (Original) The method of claim 18 wherein the pre-polymer mixture includes a hydrogel, a photo-initiator and a cross-linker.

23. (Original) The method of claim 18 wherein the pre-polymer mixture includes 2-hydroxy ethyl methacrylate (HEMA), acrylic acid (AA), ethylene glycol dimethacrylate (EGDMA), and 2,2-dimethoxy-2-phenylacetophenone (DMPA).

24. (Original) The method of claim 18 wherein the dye is phenolphthalein.

25. (Original) The method of claim 18 wherein the dye is congo red.

26. (Original) The method of claim 18 further comprising the additional step of passing fluid over a second monitor structure provided in the channel such that the second monitor structure changes color in response to a second parameter of the fluid having a predetermined value.

27. (Original) The method of claim 26 comprising the additional steps of:

mixing a second dye in a second pre-polymer mixture and providing the same as a second pregel;

injecting the second pregel into the channel of the microfluidic device; and

polymerizing the second pregel in the channel to form the second monitor structure.